

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 January 2004 (22.01.2004)

PCT

(10) International Publication Number
WO 2004/007346 A3

(51) International Patent Classification⁷: **B67D 5/60**,
B01F 5/06

(21) International Application Number:
PCT/US2003/022282

(22) International Filing Date: 16 July 2003 (16.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/396,024 16 July 2002 (16.07.2002) US

(71) Applicant (for all designated States except US): **MIXTEK SYSTEM, LLC** [US/US]; 150 Central Park South, Suite 3210, New York, NY 10019 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GRAY, Richard**

[US/US]; 150 Central Park South, New York, NY 10019 (US). **MEARS, Christopher** [US/US]; 5 Furnace Road, Chester, NJ 07930 (US). **WITTKAMP, Joel** [US/US]; 1101E Aviation Parkway, Morrisville, NC 27650 (US).

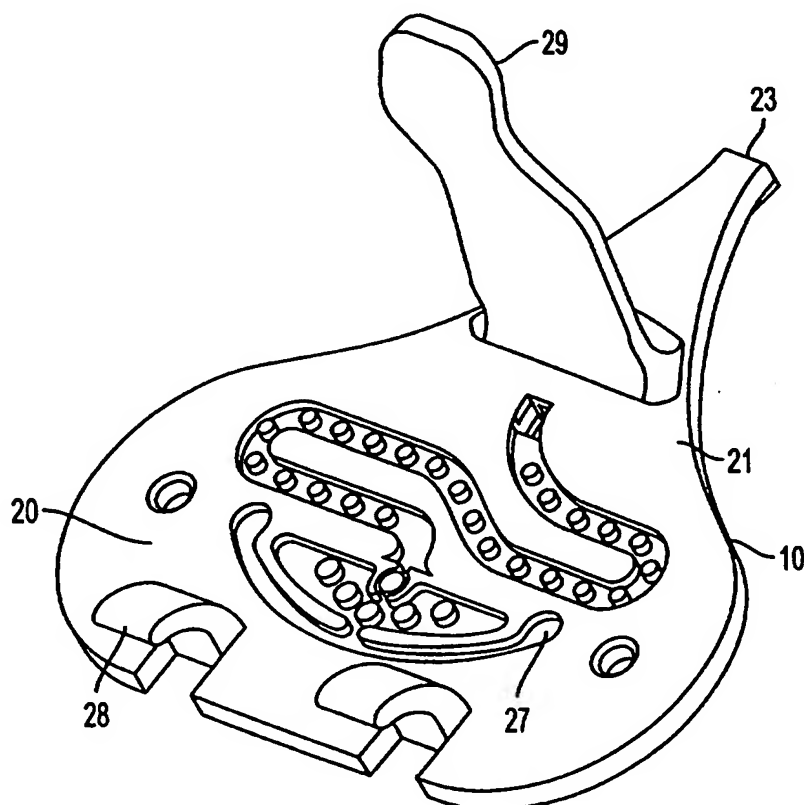
(74) Agent: **GOLLIN, Michael, A.; VENABLE, LLP**, P.O. Box 34385, Washington, DC 20043-9998 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

[Continued on next page]

(54) Title: AEROSOL MIXING SYSTEM WITH COLUMNS



(57) Abstract: A mixing system and methods for mixing a plurality of constituents from a plurality of containers that includes a collar (30), a head (10), a cartridge (20) and, optionally a base (40). If present, the base is configured to hold and secure at least two containers (50). The collar is configured for coupling to the containers (50). A head (10) is coupled to the collar (20) and contains the cartridge (20). The cartridge includes a plenum (22), a mixing canal (24), and an outlet (23), that are connected to mix the constituents as they pass through the plenum, mixing canal and outlet and are released from the container. The mixing canal (24) includes a plurality of columns (26), which may be of any shape, to facilitate mixing. The system can also include a lever (29) for activating release of the constituents from the containers (50).